





WORKING PAPER  
ALFRED P. SLOAN SCHOOL OF MANAGEMENT

ATTITUDE CHANGE DURING MANAGEMENT EDUCATION:  
A STUDY OF ORGANIZATIONAL INFLUENCES  
ON STUDENT ATTITUDES\*

Edgar H. Schein  
Massachusetts Institute of Technology

September, 1965

#140-65

MASSACHUSETTS  
INSTITUTE OF TECHNOLOGY  
50 MEMORIAL DRIVE  
CAMBRIDGE, MASSACHUSETTS 02139

and placement of several new species and subspecies  
and reassessments were listed. In 1983, 200-210  
species were described.

Small groups of micro-organisms have often been  
assigned to genera which do not contain any other  
members, and it is difficult to decide whether such  
isolates should be included in the genera mentioned  
above or whether they should be placed in separate  
genera.

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Technical Report No. 2

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## I. Introduction

The study reported below attempts to determine 1) what patterns of attitudes and values characterize the faculty and students of the Sloan School of Management, and 2) what changes occur in the attitudes and values of students during their management education.

The reason for the emphasis on attitudes and values in contrast to knowledge and skills is two-fold. First, previous efforts to evaluate educational efforts have tended to overemphasize the knowledge and skill variables. Studies of attitudinal areas have been largely limited to the human relations area.\* Second, it is my own assumption that attitude and value change is not only an important consequence of shifts in organizational role (Lieberman, 1956) but may well be a prerequisite for such shifts. As I have argued elsewhere (Schein, 1961, 1963), advancement into the higher levels of management is as much or more a function of having the right attitudes, values, and perspectives, as it is a function of having the right skills or abilities. Both are obviously necessary, but the attitude and value area has been neglected in research on management development.

A number of studies of the professions such as law, medicine, and dentistry have found that the years of schooling and early practice or internship serve not only to teach the student how to perform

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\* An excellent review of prior work can be found in Miner (1965).



his professional role, but also influence his attitudes and values towards those generally held in the profession (Merton et al., 1957; Becker et al., 1961; Quarantelli et al., 1964; Fisher, 1960). One can think of the professional school as a "socializing" institution, therefore. For any given school, it is not clear, however, to what extent it devotes its energies to teaching the attitudes and values which presently prevail in the profession or devotes its energies toward redefining what the attitudes and values of the profession ought to be. Universities are not only in the business of disseminating new knowledge and technology, but perhaps function to disseminate new values as well.

In order to obtain data on this issue, the present study took as its reference points the attitudes and values of the faculty on the one hand and the attitudes and values of a group of executives on the other hand. The initial attitude and value position of students and the patterns of change observed could then be related to these two reference points. If faculty and executive attitudes are different (as has been shown in selected areas by Anikeeff, 1954 and Yoder et al., 1963) and students are influenced by the faculty, we have evidence that the School is in the business of redefining the profession in those areas. If faculty and executive attitudes are similar, we have evidence that the School is functioning to prepare the student for the prevailing attitudinal climate in industry.



## II. Procedure

### A. Survey Samples

The study was carried out with two student populations, the faculty, and a group of Senior Executives who attend the School for a ten-week management development course.

One student group consisted of the regular graduate students (Graduates) who are enrolled in a two-year curriculum leading to an S.M. degree in Management. Attitude questionnaires were sent to all incoming members of two successive classes during the summer prior to entry in the program. Complete initial data were obtained from 72 and 62 men, constituting virtually the entire entering classes. Final data were obtained roughly two years later during the month prior to graduation from 39 and 34 men respectively, constituting 54 and 55 percent of the two classes.

The high attrition of respondents was due to a number of forces which include withdrawal from the program at the end of the first year and lack of motivation to complete the study. However, comparison of the initial attitude data of the original entering classes with the initial data of only those men who completed the study shows no significant differences. Our final samples can, therefore, be assumed to be representative of the class attitudes.

The other group of students surveyed were the Sloan Fellows (Sloans), a group of middle-level managers, roughly 30 to 40 years



old, who are sent to M.I.T. by their companies to obtain the S.M. degree in an intensive twelve-month program. They are similar to the Graduates in being college graduates, selected for academic potential, and managerially oriented. They are different in being older and having already occupied management roles for roughly ten years. Thus, the Sloans might be expected to resemble other management groups more than students at the beginning of the management program. Three entire Sloan classes, consisting of 41, 44, and 46 men were tested prior to their arrival at M.I.T. Of these men, 40, 41, and 40 respectively completed the survey roughly two weeks before graduation.

In addition, data were obtained from two classes of Senior Executives (Executives). These 42 men were tested early in their ten-week executive development course. They are particularly relevant as a reference group because they also chose to attend M.I.T. Thus, the biases which are inherent in the choice of the M.I.T. Sloan School of Management as a place to pursue graduate education are controlled for by using only groups who had this choice in common.

To determine how attitude changes related to the attitudes deliberately or unconsciously promulgated by the Sloan School, we tested all available members of the teaching faculty of the School ( $N=54$ ), and asked each respondent to identify himself sufficiently to permit us to categorize him accurately in terms of teaching area.



B. Attitude Areas

Attitudes were surveyed with an objective questionnaire consisting of 100 belief or value statements, each of which could be answered by Strongly Agree, Mildly Agree, Mildly Disagree, or Strongly Disagree. The statements were originally selected from a larger pool of 190 items in terms of the following criteria: 1) ability to discriminate between groups presumed to be different, e.g., management students, young managers, and senior managers; 2) ability to produce a reasonable spread of responses from agree to disagree in at least some of the groups surveyed; 3) ability to reflect a content area presumed to be relevant to the managerial role.

The pool of items was chosen around the following content foci: 1) government-business relations, 2) labor-management relations, 3) areas of corporate responsibility, 4) superior-subordinate relations, 5) theory of how to organize and manage, 6) general cynicism-idealism about all aspects of business, 7) cynicism-idealism about how to get ahead in organizations, 8) degree of faith or confidence in workers, 9) individual vs. group incentives and decisions, and 10) large vs. small business.

The 190-item attitude questionnaire was pretested on earlier samples of Graduates, Sloans, and Executives. The 100 best items were retained and the resulting questionnaire was administered to the groups described above. Based on all the data obtained with these 100 items, we then carried out a series of factor analyses to establish reliable attitude scales, and to refine the scoring procedure by including only those items in a scale which in fact



tended to cluster. The factor analysis identified 19 scales instead of the original 10 we had postulated.\*

C. Change Criterion

In order to determine whether attitudes had changed or not, we used a complex criterion based both on replication and statistical significance. Using only scale scores, we first examined the direction of change in the two Graduate groups and the three Sloan groups. Changes were considered potentially reliable only if each group changed in the same direction. Even if a large shift occurred in a single year, it was ignored unless shifts in the other years were in the same direction.

The second criterion was a t-test run within each group, using each man's original and final scale score. A Graduate change was considered to be statistically significant if the directional criterion described above was met, if the change in one group clearly reached the .05 level of significance or better (two-tailed), and if the other group at least approached significance or better. A Sloan change was considered significant if all three groups changed in the same direction and if at least two out of the three reached at least the .05 level of significance on the t-test.

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\* The scale names and items which make them up are shown in the Results section. A more detailed description of the construction of these scales can be found in Schein, McKelvey, and Crawford, 1966.



In subsequent discussions, when we speak of changes in means as being significant, we are referring to the dual criterion described above, not to a simple t-test of the combined figures.

#### D. Presentation of Results

Because of the large number of scales and groups, a visual form of presentation was chosen.\* The group mean for each of the following groups is shown for each scale in Figures 1-4 by means of the letter symbol indicated next to the group:

42 Senior Executives (E)

54 Faculty Members (F)

13 Faculty teaching in the Organization area (O)  
10 Faculty teaching Economics, Finance, or Accounting (Fi)  
8 Faculty teaching Quantitative Methods, Statistics, or  
Industrial Dynamics (Q)  
5 Faculty teaching Operations Management or Production (P)  
5 Faculty teaching Marketing (M)  
5 Faculty teaching Labor Relations (L)\*\*

121 Sloans at initial testing ( $S_1$ )  
121 Sloans at final testing ( $S_2$ )

73 Graduates at initial testing ( $G_1$ )  
73 Graduates at final testing ( $G_2$ )

If the shift in student attitude was significant by the criteria outlined above, an asterisk is drawn in next to the arrow indicating the shift. Scales which showed the greatest Faculty-Executive differences are shown first.

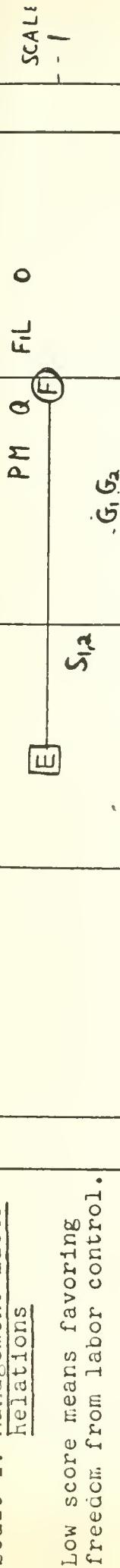
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\* The original means and standard deviations are available upon request.

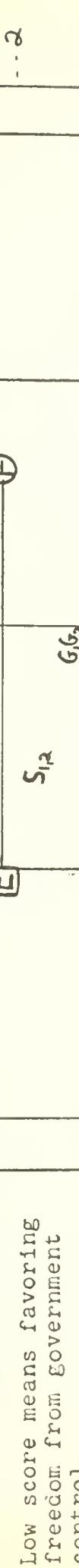
\*\* Eight other faculty members were not included because they fell into groups of less than five. They represent administrative policy, law, and economic history.



Scale 1. Management-Labor Relations

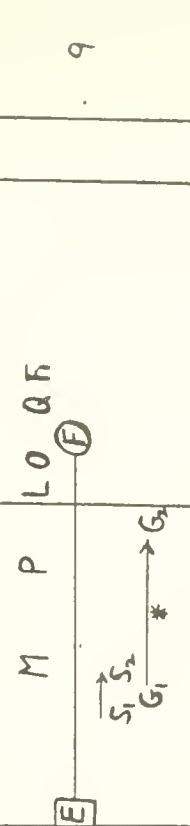


Scale 2. Business-Government Relations



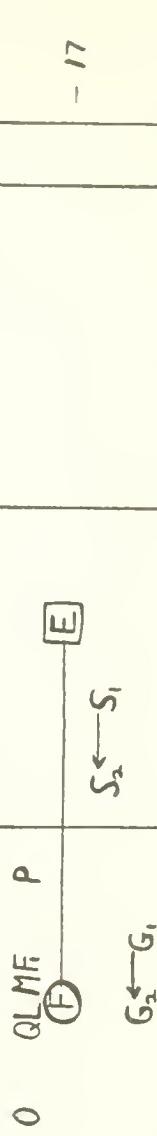
Scale 9. Right to Privacy

Low score means that employee should not have rights to privacy.



Scale 17. Cynicism About How to Get Ahead

Low score means high cynicism.



Scale 18. Cynicism About Conformity Pressures

Low score means high cynicism.

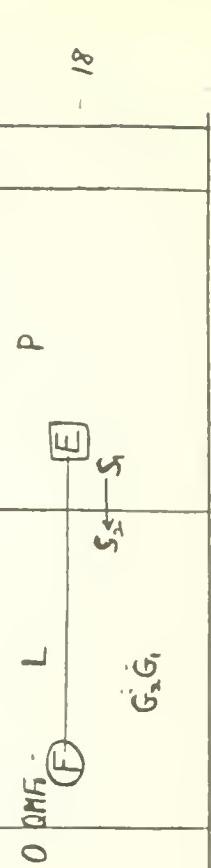


Figure 1. Mean scores of various groups on the scales shown: Faculty (F), Senior Executives (E), Organization Group (O), Finance Group (F1), Marketing Group (M), Labor Relations Group (L), and Quantitative Group (Q); Initial Sican measure ( $S_1$ ), final Sican measure ( $S_2$ ), initial graduate student measure ( $G_1$ ), final graduate student measure ( $G_2$ ). Significant changes are shown by an asterisk.



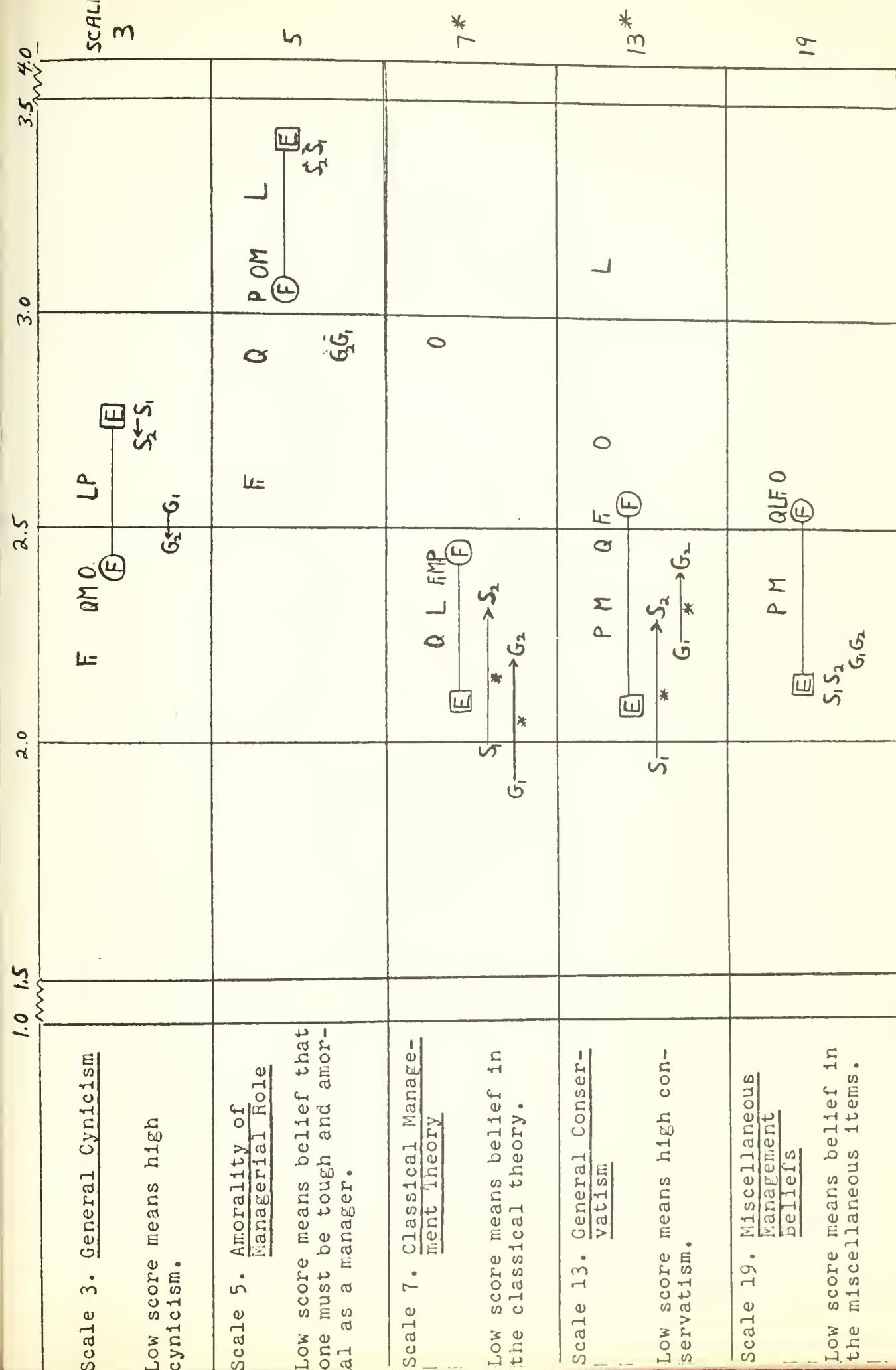


Figure 2. Mean scores of various groups on the scales shown. See Figure 1 for key to symbols in the figure.



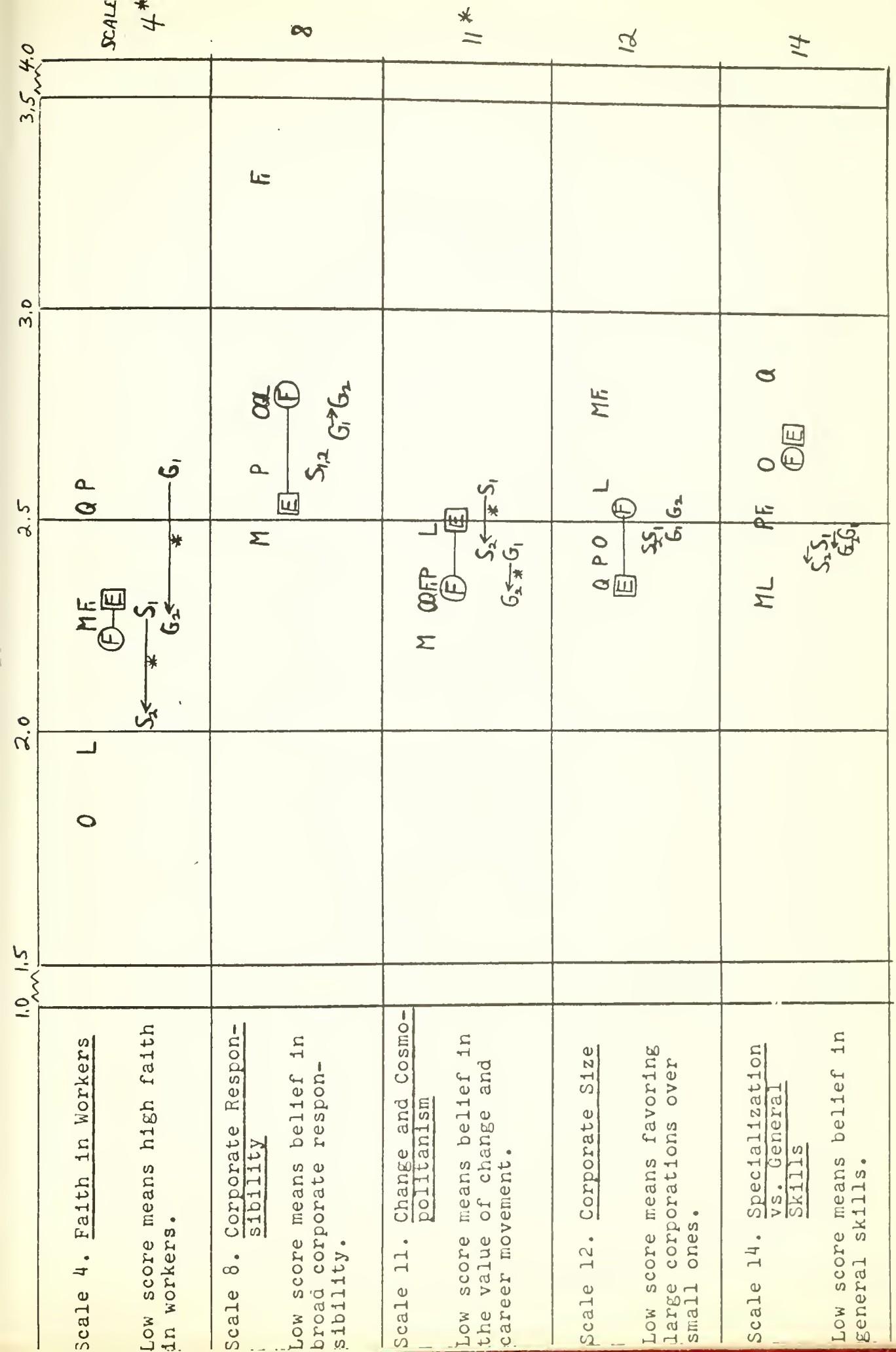


Figure 3. Mean scores of various groups on the scales shown. See Figure 1 for key to symbols in the figure.



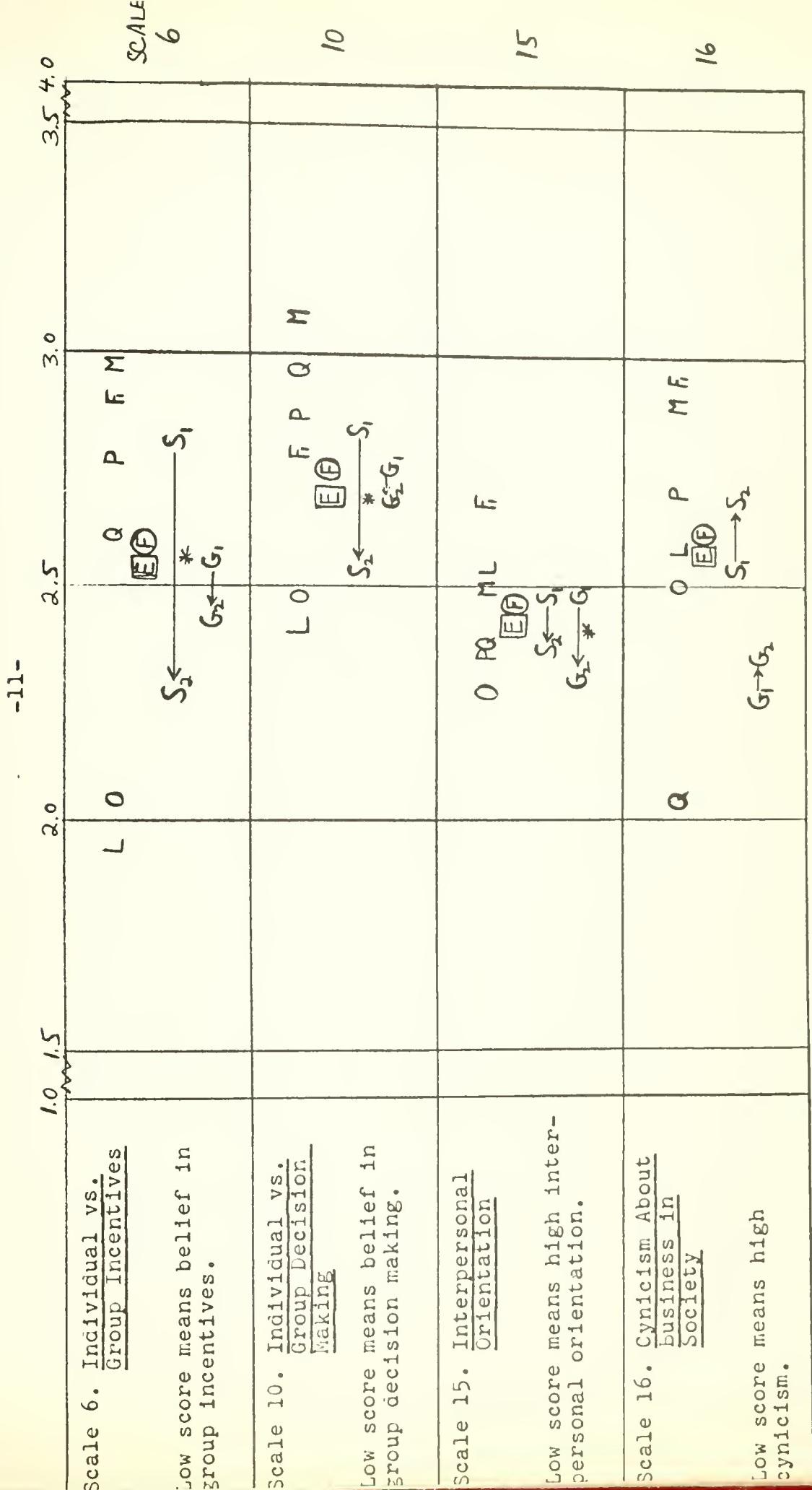


Figure 4. Mean scores of various groups on the scales shown. See Figure 1 for key symbols in the figure.



### III. Results

#### A. Individual Scale Results

##### Scale 1. Management-Labor Relations

- 32. Management will usually do what is best for its employees without outside influence from unions.
- 57. A man who is willing to work hard in industry does not need a union to protect him.
- 28.\* Managers are not always sincere in their dealings with other people.
- 35.\* The average employee's standard of living would not be what it is today had it not been for the efforts of labor unions on his behalf.
- 45.\* Many employers think only of their profits and care little for their employees' welfare.

As can be seen from Figure 1, there is a considerable difference between Faculty and Executive attitudes, with Executives being against labor intervention and the Faculty being for it. All of the faculty sub-groups cluster around the mean and are on the same side of the scale, but the Production and Marketing groups are closest to the Executives, while the Organization group is farthest away. The Sloans are closer to the Executives than the Faculty, as might be expected. No change whatever occurs in their attitudes toward labor-management relations during the year. The Graduates occupy a middle position between Executives and Faculty and remain there. On this scale, then, no attitude change occurs during the program in spite of the consider-

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\* Items marked with an asterisk are reversed in the scoring. In computing the scale score, all items are weighted equally and scored 1 for strongly agree, 2 for mildly agree, 3 for mildly disagree, and 4 for strongly disagree. The scale mean is the total score divided by the number of items on which some responses were given. For example, a low scale score on this scale means agreement with items 32 and 57, and disagreement with items 28, 35, and 45. A low score, therefore, means that the respondent favors minimum control and intervention by labor in management affairs.



able initial difference between the Faculty and the student groups.

Scale 2. Business Government Relations

1. Governmentally operated projects cannot compete with private enterprise because they are less efficient.
6. Government should be headed by men trained in business techniques and sympathetic to the cause of business.
10. Private enterprise working through a market economy provides the most equitable distribution of society's goods and services.
38. Government competition with private enterprise is unfair and should be eliminated.
53. The legal system of this country is generally slanted against big business.
55. Management will usually do what is best for its employees without outside influence from the government.
86. Present tax laws tend to stifle capital expansion by business more than they encourage it.
99. The welfare of society is best achieved if all businesses pursue profit to the best of their ability.
- 81.\* "Price fixing," contract rigging, and other similar activities by leading American business firms show that the Federal Government must take a more active role in the policing of private enterprise.
- 92.\* Compulsory arbitration should be instituted in vital industries such as the steel industry, to insure our country against work stoppages which jeopardize national defense.

This scale presents a picture similar to that of scale 1 (Figure 1). The Faculty and Executives are far apart and on opposite sides of the scale. Production and Marketing are again most similar to the Executives, while Finance is the least similar. The Sloans fall close to the Executives and do not change, while the Graduates fall roughly between the Executive and Faculty groups, and also fail to change during their two-year course.



Scale 9. Right to Privacy

- 43. A young man entering industry should be careful in selecting a wife to make sure she will fit into his career plans.
- 60. The private life of an employee is properly a matter of direct concern to his company, for the two can never be completely segregated.
- 78. A wife's social grace and attractiveness play a significant role in her husband's rate of advancement.
- 98. Nowadays when industry hires a new manager his whole family should be screened as an indication of his potential for advancement.
- 16.\* The private life of an employee should be of no direct concern to his company.

On this scale, which concerns essentially the degree to which the company has the right to obtain and use information about an employee's family and private life, all groups tend to fall on the "disagree" side, but the Executives are near the neutral point while the Faculty is on the "strongly disagree" end (Figure 1). Again, the Marketing and Production groups are most similar to the Executives, while the Finance group is least similar. The Sloans are similar to the Executives and change slightly, but non-significantly, toward the Faculty. The Graduates start out similar to the Sloans but show a highly significant shift toward the Faculty. At graduation, they are therefore less similar to the business reference group than they were when they entered business school.

Scale 17. Cynicism About How to Get Ahead

- 3. The man who gets ahead in industry is the man who has someone sponsoring him.
- 9. The man who gets ahead in industry is the man who knows the right people.
- 28. Managers are not always sincere in their dealings with other people.



This scale also shows the Faculty and Executives on opposite sides of the neutral point, with the Faculty being more cynical (Figure 1). The Production group is most similar to the Executives, while the Organization group is least similar. The Sloans start out near the Executives but show a consistent, though non-significant, shift toward the Faculty. The Graduates start out similar to the Faculty and shift to a position of even greater similarity, though the shift is not statistically significant. Once again, at graduation, the student groups are more like the Faculty and less like the business reference group.

Scale 18. Cynicism About Conformity Pressures

- 42. Industry's basic idea is to drive you as hard as it can and give you as little as possible.
- 64. Most large corporations are placing more stress on the "corporation loyalty" of the employee than on his individual growth.
- 80. A large corporation tends to suppress individual creativity.
- 33.\* The best kind of emotional relationship between a superior and a subordinate is an open one in which each party feels it can "level" completely with the other.

With the exception of the Production group (Figure 1), the Faculty is generally more cynical about conformity pressures in industry than the Executives. On all previous scales discussed, the Production and Marketing groups have tended to resemble each other closely, but in this attitude area they diverge sharply with the Production group being even less cynical than the Executives. Sloans, as on the previous scales, start out fairly close to the Executives and show a small non-significant shift toward the Faculty. Graduates



start close to the Faculty and remain there.

Scale 3. General Cynicism

26. The good manager is willing to make decisions which will hurt others.
28. Managers are not always sincere in their dealings with other people.
40. The good businessman is basically a cold, calculating kind of person.
41. Most corporations do not have clear objectives which can serve as guides to executive decisions.
42. Industry's basic idea is to drive you as hard as it can and give you as little as possible.
45. Many employers think only of their profits and care little for their employees' welfare.
46. It is the tough, driving, impersonal man who really gets ahead in industry.
74. Many managers are suspicious of their business associates.
76. Some degree of cynicism is a valuable attribute in a manager.
- 32.\* Management will usually do what is best for its employees without outside influence from unions.

This scale combines all those items which tend to allow the expression of a generally cynical attitude toward business as a whole (Figure 2). Though the difference is not large, the Faculty is definitely more cynical than the Executive group, with the Finance group being the most cynical and the Production group being least cynical. Both Sloans and Graduates start on the less cynical side and move toward the Faculty, though neither shift is statistically significant.

Scale 5. Amorality of Managerial Role

17. The hardest part of a manager's job is having to compromise his own ethics and morals in order to get his job done.
40. The good businessman is basically a cold, calculating kind of person.
66. Managers often have to treat people unfairly to get their job done.
91. Most managerial jobs require a person to compromise his ethics or morals to some degree.
100. Religious teachings cannot be strictly observed in the business setting.



None of the groups tend to endorse this cluster of items, but the Executives disagree with them to a greater extent than the Faculty (Figure 2). In other words, the Executives believe more strongly than most of the Faculty that one can be a manager without having to abandon religious or ethical principles to any degree. On this scale, the Labor Relations group is closest to the Executive position, while the Finance group is farthest from it. The Sloans closely resemble the Executives and do not change. The Graduates, along with the Finance and Quantitative groups, endorse these items to a greater extent than the Faculty. At final testing, they remain where they started.

Scale 7. Classical Management Theory

- 8. In industry there must always be unity of command so that individuals will not be subject to conflicting authority.
- 34. The human relations-group dynamics approach in industry tends to stifle the individuality of employees.
- 52. Responsibility should never exceed authority because the individual cannot be held responsible for what he does not control.
- 93. A clearcut hierarchy of authority and responsibility is the cornerstone of the business organization.
- 94. The engineer in industry should give his primary allegiance to the company he works for, not the engineering profession as such.

Executives tend to believe in the principles reflected in these items to a greater extent than the Faculty (Figure 2). However, the Organization group of the Faculty is in conspicuous disagreement with these items. Both the Sloans and the Graduates show a significant shift away from the Executive position toward the Faculty position. It is tempting to hypothesize that this consistent shift represents the influence of the Organization group since it is the most



extreme and is the one most likely to discuss these principles (or alternatives to them) in the required class work.

Scale 13. General Conservatism

4. Most industrial problems can be attributed to a few basic causes.
6. Government should be headed by men trained in business techniques and sympathetic to the cause of business.
47. The "committee way of life" in an organization often results in a good bit of wasted time.
77. There are many sound principles of business which should not be changed even if economic and technological conditions change.
86. Present tax laws tend to stifle capital expansion by business more than they encourage it.

Executives tend to be more conservative on these items than the Faculty, with the Production and Marketing groups being the most conservative and the Labor Relations and Organizations groups being the least conservative (Figure 2). The Sloans start out as more conservative than the Executives but shift significantly toward the Faculty. Graduates also show a significant shift from more to less conservatism. On this and the previous scale discussed, the student groups again become less similar to managers.

Scale 19. Miscellaneous Management Beliefs

23. The man who gets ahead in industry is the man who is willing to work hard.
55. Management will usually do what is best for its employees without outside influence from the government.
56. Managers usually deal with people in a democratic manner.
57. A man who is willing to work hard in industry does not need a union to protect him.
58. The good manager should rely on explanation and persuasion rather than direct orders.
59. To succeed in business one must be able to take criticism without being hurt by it.
61. Most managers are delightful people to know socially.



Scale 19 (continued)

- 63. Group incentive plans are superior to piece work systems in stimulating high productivity.
- 65. The most important objective of a company is to manufacture and sell products which are useful to society.
- 67. Industry would be better off if it consolidated some of its practices instead of constantly planning for change.

This cluster of items was revealed by factor analysis and reflects the kinds of propositions one might expect a manager of today to endorse (Figure 2). Executives agree with these items more than the Faculty, and the variation within the Faculty is not as great on this scale as on the previous one. Both Sloans and Graduates tend to remain at their original position.

Scale 4. Faith in Workers

- 30. The average worker in industry seeks responsibility and is capable of exercising self-control.
- 84. Leadership skills can be acquired by most people, regardless of their particular inborn traits or abilities.
- 44.\* The average worker in industry prefers to avoid responsibility, has little ambition, and wants security above all.
- 87.\* The average worker in industry has an inherent dislikes of work and will avoid it if he can.

This scale reflects a somewhat different pattern from most of the previous ones in that the means of the Faculty and Executive groups are nearly the same, but the sub-groups of the faculty differ very markedly (Figure 3). The Organization and Labor Relations groups show very high faith in workers, while the Quantitative and Production groups show relatively less faith in workers. The Sloans start out near the mean of the Executives but move significant toward the Organization and Labor Relations extreme, while the Graduates start at



the low faith extreme and move significantly toward the means of the Faculty and Executives. Here, we have a case where the beliefs and values of the Organization and Labor Relations groups seem to have exerted a significant influence on the student groups.

Scale 8. Corporate Responsibility

- 13. Corporations have a definite obligation to take a stand on political issues.
- 22. Corporations have a definite obligation to support liberal arts colleges.
- 27. Corporations have a definite obligation to give money to charity.
- 69. A corporation must be responsible for the health and welfare of its employees and their immediate families.
- 82. Corporations have a definite obligation to be actively involved in community affairs.

All of the groups tend to favor slightly a concept of limited corporate responsibility and neither student group initially deviates or shifts on this scale (Figure 3). The only result of note is the extreme position of the Finance group in favor of limited responsibility. As on previous scales, Production and Marketing tend to be closer to the Executive position.

Scale 11. Change and "Cosmopolitanism"

- 12. The best way to get ahead in business is to move from organization to organization.
- 15. Resistance to change is industry's major problem.
- 25. The most important skill for the manager of the future will be skill in planning and controlling change.
- 29. Nowadays it is more important for a manager to be loyal to his profession than to any given organization.
- 50. Constant change and innovation is basically a good thing for society and its institutions.
- 73. The more a young executive moves from job to job within a company, the greater will be his chance for success.
- 80. A large corporation tends to suppress individual creativity.



Scale 11 (continued)

- 67.\* Industry would be better off if it consolidated some of its practices instead of constantly planning for change.
- 77.\* There are many sound principles of business which should not be changed even if economic and technological conditions change.
- 94.\* The engineer in industry should give his primary allegiance to the company he works for, not the engineering profession as such.

Though our original assumption was that these items would break into two separate scales, it turned out that they tended to form a single scale such that the person who believes in the value of change also tends to believe in the value of a professional, cosmopolitan orientation toward the management career (Figure 3). On the other hand, the person who favors stability also tends to favor organizational loyalty and a more institutional career concept. The Faculty is slightly more in favor of change than the Executives, with Marketing being most and Labor Relations being least in favor of these items. Both student groups show a statistically significant, though not large, shift away from the Executives toward the Faculty. It would be interesting to determine whether this shift reflects the influence of the Marketing group.

Scale 12. Corporate Size

- 89. Large corporations create more opportunities than small companies for the individual to maximize his talents.
- 97. A large corporation is generally a more desirable employer than a small company because it offers security, regular advancement, and a wider selection of jobs.

Executives tend to be in favor of the large corporation to a greater extent than the Faculty, though the difference is small



(Figure 3). The Marketing and Finance groups tend to be least in favor of largeness. Neither student group shows a shift on this scale.

Scale 14. Specialization versus General Skills

- 33. The one most important factor contributing to a manager's advancement is his ability to get along with people.
- 48. The successful manager is a "jack of all trades and master of none."
- 88.\* The successful manager is the one who becomes an expert in his own particular functions.

The Faculty favors being a generalist slightly more than the Executives, but shows a considerable spread on this scale, with the Marketing and Labor Relations groups being most in favor and the Quantitative group being least in favor (Figure 3). This is not surprising in view of the increasing specialization of knowledge which the quantitative techniques have reflected and, in turn, encouraged. However, neither student group is influenced by this position. What little change occurred is in the opposite direction, toward favoring the generalist position.

Scale 6. Individual versus Group Incentives

- 39. Piece work systems are bad for company morale since they force competition between fellow workers.
- 63. Group incentive plans are superior to piece work systems in stimulating high productivity.
- 95.\* Piece work systems are good for company morale because they stimulate high productivity.

Attitudes toward group incentives do not differ if we compare the means of Executives and Faculty, but the range within the faculty group is greater on this scale than on any other (Figure 4). The



Labor Relations and Organization groups are markedly in favor of group incentives, while the Finance and Marketing groups are sharply opposed to them. The Sloans start their year being slightly opposed but shift markedly and significantly toward the Organization and Labor Relations extreme. A similar but statistically non-significant shift takes place in the Graduates. Since both the Organization and Labor Relations groups explicitly teach about groups and the value of group incentives, we may hypothesize that these shifts are the result of the influence exerted by these groups.

Scale 10. Individual versus Group Decision Making

- 63. Group incentive plans are superior to piece work systems in stimulating high productivity.
- 68. Individual decisions cannot be as consistently sound as group decisions.
- 2.\* Group decisions are generally more conservative than what the leader of the group would have done had he decided alone.
- 14.\* The quality of individual decisions is generally higher than the quality of group decisions.
- 47.\* The "committee way of life" in an organization often results in a good bit of wasted time.

On this scale, both Executives and Faculty tend to be slightly against group decision making (Figure 4). The Organization and Labor Relations groups are most favorable, while the Marketing and Quantitative groups tend to be least favorable. The Sloans show a significant shift toward the Organization-Labor Relations position, while the Graduates remain essentially the same.

On both scales which involve attitudes toward groups, we have a pattern of strong variation of opinion within the Faculty. The



Organization and Labor Relations groups appear to influence both the Sloans and the Graduates toward their position, though the influence is much stronger on the Sloans.

Scale 15. Interpersonal Orientation

- 75. In business decisions, the human factor is usually more important than the economic factor.
- 85. Sensitivity to the feelings of others is a definite asset to a manager.
- 26.\* The good manager is willing to make decisions which will hurt others.

The differences between the reference groups are small on this scale, but both Sloans and Graduates show a shift past the Faculty and Executive means toward the position of the Organization group (Figure 4). Here, as in the previous two scales, there is some evidence for the hypothesis that the students are being influenced by this group.

Scale 16. Cynicism About Business in Society

- 7. Most consumers' products manufactured today have been designed to last not more than a few years.
- 11. Proper advertising can sell virtually any product.
- 19. A corporation with a good public image can sell even an inferior product.
- 65.\* The most important objective of a company is to manufacture and sell products which are useful to society.

This scale reveals little difference between Executive and Faculty means but shows considerable spread within the Faculty (Figure 4). The Quantitative group is the most cynical, while the Marketing and Finance groups are the least cynical. Students tend to start at the more cynical extreme and move toward the less cynical, but neither shift is statistically significant.



Summary of scale trends

A number of trends emerge as one examines the findings on the different scales.

1. On at least half of the scales, the Faculty and Executives differ markedly in their attitudes and values.

These differences are in the expected direction in that Executives are less in favor of government or labor intervention, less cynical about all aspects of corporate life, more conservative and in favor of "traditional" management principles, and more in favor of being concerned about the private life of employees. If one includes the Sloans as representatives of management and compares their initial scale position to that of the Executives and Faculty, a similar finding emerges on these same scales. In every instance, the Sloans are closer to the Executives than to the Faculty. It is interesting to note, however, that on scales 1, 2, 9, 17, and 18, the scales which show the largest Executive-Faculty difference, the Sloans tend to fall between the Faculty and the Executives, suggesting that in these areas, attitudes tend to diverge with increasing managerial experience and rank.

2. The intial position of the graduate student entering the School of Management tends to fall between the Faculty and Executive extremes.

On seven separate scales (1, 2, 8, 9, 12, 17, and 18), the Faculty, Graduates, Sloans, and Executives line up in that exact order in terms of initial attitude position. On most of these scales, and on a number of others, even the most extreme of the faculty subgroups do not come close to the mean of the Executives. The extent



of Faculty-Executive differences and the line-up of groups suggests that on these scales, the academic attitudes and values represent an extreme position which the student must unlearn as he rises in the business world. These findings further suggest that the Faculty, particularly those sub-groups which are most deviant from Executive attitudes, are definitely in the business of changing management attitudes, rather than preparing students to fit into the presently prevailing attitude climate.

3. The change data show an unequivocal trend in both Sloans and Graduates toward the adoption of Faculty attitudes, which means a departure from prevailing management attitudes on all those scales where Faculty and Executives differed initially. In other words, it appears that the Faculty successfully influences its students in a number of attitude areas; but, by virtue of this influence, it makes Graduates less similar to managers whom they are likely to encounter in industry.

In the case of the Sloans, there is a consistent shift away from the Executives and toward the Faculty on scales 9, 17, 18, 7, 13, 4, 11, and 16. By the rather stringent criteria outlined above, this shift is statistically significant on scales 7, 13, 4, and 11. The Sloans show a highly significant shift on two other scales both dealing with individual versus group effort (scales 6 and 10). In these cases, the shift is away from both the Executive and Faculty means toward the extreme position of the Organization and Labor Relations groups. A similar trend occurs on scale 15.



In terms of content, the Sloans become less favorable toward using private information about employees, more cynical about advancement and conformity pressures, less conservative, less accepting of classical management principles, more trusting of workers, more accepting of change and cosmopolitanism, less cynical about business-society relationships, and more accepting of group incentives and group decision making. The biggest changes occur in the "human" area (scales 4, 6, 7, and 10) and in decrease of general conservatism (scale 13).

The Graduates shift consistently toward the Faculty on scales 9, 17, 3, 7, 13, 4, 8, 11, and 16, this shift being significant on scales 9, 7, 13, 4, and 11. The only other significant shift occurs in scale 15 away from both Faculty and Executive means toward the Organization group position. Graduates show a non-significant trend toward acceptance of group incentives but an inconsistent shift concerning group decision making.

In terms of content, Graduates become markedly less favorable toward the use of private information, more cynical, markedly less conservative and less accepting of classical management principles, much more trusting of workers, more accepting of a concept of limited corporate authority, much more change and cosmopolitan oriented, less cynical about business-society relationships, and much more interpersonally oriented. The impact of the human areas is again in evidence, but is not as marked as in the case of the Sloans.

Looking at those scales which produced a statistically significant



shift in both Sloans and Graduates, we see the major changes to be greater faith in workers, less acceptance of classical management principles, more acceptance of change and cosmopolitanism, and less conservatism. Within the limitations of this attitude questionnaire, the above represents the major impact of the School on the students' attitudes and values.

On the other hand, the School has virtually no measurable impact on attitudes about government or labor intervention, conceptions of how tough and amoral the management process is, degree of cynicism about conformity pressures, and acceptance of the principles of management listed in Scale 19. On the remaining scales, students either tended to be similar to the Faculty in the first place, to move inconsistently, or to move consistently, but not significantly, toward the Faculty position.

#### B. Faculty Sub-Groups

Figure 1 through 4 reveal that the distribution of faculty responses tend to be broad; but that the variation is not merely a function of individual differences. Rather, there appears to be a patterning of responses in a number of scales which reflects the sub-group with which the faculty members are identified. The patterning of individual responses within sub-groups is illustrated in Table 1 which shows four scales on which differences are marked. Every entry is a different faculty member. We have added an additional group consisting of four people who teach what might broadly be considered as "administrative policy."



Table 1: SCALE SCORES OF INDIVIDUAL MEMBERS OF FACULTY SUB-GROUPS ON  
SELECTED SCALES TO ILLUSTRATE AMOUNT OF  
VARIABILITY WITHIN SUB-GROUPS

Scale 2: Government-Business

O	Fi	Q	P	M	L	A
3.9	3.4	3.8	3.0	3.0	3.4	3.0
3.5	3.3	3.6	2.7	2.9	2.9	2.7
3.2	3.2	3.0	2.7	2.4	2.9	2.7
3.2	3.2	3.0	2.6	2.2	2.8	2.0
3.0	3.1	3.0	2.2	1.8	2.4	
3.0	2.9	2.8				
2.9	2.9	2.7				
2.9	2.9	1.7				
2.8	2.8					
2.7	2.5					
2.5						
1.9						
1.5						
mean	2.8	3.0	2.9	2.6	2.5	2.6

Scale 4: Faith in Workers

O	Fi	Q	P	M	L	A
2.8	3.0	4.0	3.0	2.5	2.8	3.0
2.5	2.8	3.0	3.0	2.5	2.2	2.5
2.0	2.8	2.5	2.7	2.2	2.0	2.3
2.0	2.8	2.5	2.2	2.0	1.5	1.7
1.8	2.5	2.3	2.0	2.0	1.2	
1.8	2.2	2.3				
1.8	2.2	2.0				
1.5	1.8	1.5				
1.5	1.8					
1.5	1.0					
1.5						
1.5						
1.3						
mean	1.8	2.3	2.5	2.6	2.2	2.4



Table 1 (continued)

Scale 6: Individual Versus Group Incentives

O	Fi	Q	P	M	L	A
3.3	4.0	3.3	3.3	3.3	2.7	4.0
2.3	4.0	3.0	3.0	3.3	2.3	3.0
2.3	3.0	2.7	2.7	3.0	1.7	3.0
2.3	3.0	2.7	2.5	2.7	1.7	2.7
2.3	3.0	2.3	2.3	2.5	1.3	
2.3	2.7	2.3				
2.0	2.5	2.0				
2.0	2.5					
1.8	2.3					
1.8	2.0					
1.5						
1.3						
1.3						
mean	2.0	2.9	2.6	2.8	3.0	3.2

Scale 10: Individual Versus Group Decisions

O	Fi	Q	P	M	L	A
3.5	4.0	3.8	3.2	3.6	2.8	3.6
3.2	3.6	3.5	3.0	3.4	2.6	3.5
3.0	3.0	3.4	3.0	3.2	2.4	2.8
2.8	3.0	3.0	2.8	2.8	2.2	2.8
2.7	2.8	3.0	2.4	2.3	2.0	
2.4	2.8	2.6				
2.4	2.4	2.4				
2.4	2.3	2.0				
2.4	2.2					
2.2		1.8				
2.2						
1.8						
1.4						
mean	2.5	2.8	3.0	2.9	3.1	3.2



One important result to be seen in these data is that when a group has what might be considered a vested interest in the intellectual area underlying its attitudes, there tends to be great unanimity of response among the members of the group. For example, in the Finance group, there is only one person who scores less than 2.8 on Scale 2. The pattern is even clearer for the Organization and Labor Relations groups on those scales which concern the "human" areas (scales 4, 6, and 10). On scale 4, only three people out of the 18 in these two groups score above 2.0, whereas the means for each of the other groups are well above that figure. On scale 6, the findings are similar with only 2 out of 18 people falling above 2.3. By contrast, in the Finance and Quantitative groups, only one person falls below 2.3, and in the Production, Marketing, and Policy groups, no one falls below it. We thus have virtually non-overlapping distributions in this area. Scale 10 is not as clearcut, but shows a similar pattern.

By inspecting the individual responses of each of the members of each sub-group, an attempt was made to locate those attitude areas which characterized the sub-group. The criterion used is a dual one--high intra-group unanimity and/or extremity of mean position relative to the other groups. The attitude cluster thus revealed can be hypothesized to represent the core value position of that faculty sub-group.

The Organization group emerges as extremely favorable toward labor intervention (1), as having high faith in workers (4), high faith in



group incentives (6) and group decision making (10), a high interpersonal orientation (15), as disagreeing with classical management principles (7), opposing the use of private information about employees (9), being highly liberal in general attitudes (13), and highly cynical about how to get ahead (17).

The Labor Relations group is similar in being favorable toward labor intervention (1), having high faith in workers (4), group incentives (6), group decision making (10), and being generally liberal (13), but it differs sharply in being highly accepting of classical management principles (7), in believing least that management must be an amoral process (5), in being least in favor of change and cosmopolitanism (11), and in being relatively less cynical about conformity pressures (18).

The Economics, Finance, Accounting group shows a pattern of strongly favoring government intervention (2), high general cynicism (3), relatively stronger belief in the amorality of the management process (5), low faith in group incentives (6), rejection of a concept of broad corporate responsibility (8), strong rejection of use of private information (9), negative attitudes toward the large corporation (12), low interpersonal orientation (15), and very low cynicism about business-society relations (16).

The Quantitative and Industrial Dynamics group resembles the Finance group in being favorable to government intervention (2), cynical (3), and against the use of private information (9), but



differs in having low faith in workers (4), high acceptance of classical management principles (7), very low faith in group decisions (10), favorable attitudes toward the large corporation (12), a very high belief that managers should be experts in particular areas (14), and extremely high cynicism about business in relation to society (16).

The Production group tends to be relatively less in favor of labor or government intervention (1, 2) to be less cynical (3), to have low faith in workers (4), to be relatively more in favor of broad corporate responsibility (8), and to be more favorable toward the use of private information about employees (9); it is highest among the sub-groups in general conservatism (13), least cynical about how to get ahead (17), and conformity pressures (18), and most accepting of the management principles in scale 19.

The Marketing group also tends to be against labor and government intervention (1,2), more in favor of broad corporate responsibility (8) and use of private information about employees (9), more conservative (13), and more accepting of the principles in scale 19. It is different from the Production group in being idealistic about the management process (5), strongly against group incentives (6), and strongly against group decision making (10); this group is most against change and cosmopolitanism (11), large corporations (12), and the concept of the manager as a specialist (14) and shares with Finance a low degree of cynicism about business-society relationships (16).

The Administrative Policy group is not shown on the figures, but can be described as follows: On most scales, it is the group which



most closely resembles the executive position in being least favorable toward labor or government intervention (1,2), least cynical (3), most in favor of broad corporate responsibility (8), most conservative (13), least cynical about how to get ahead (17), and most accepting of the scale 19 items. They differed from the Executives on several scales, however, in being even much less cynical about morality in management than Executives (5), having least faith of any group in group incentives (6), or decision making (10), and accepting classical management principles (7) to an even greater degree than Executives.

In summary, then, we appear to have two clusters of faculty sub-groups--the Administrative Policy, Production, and Marketing groups which tend to resemble the Executive group, and the Organization, Finance, Labor Relations, and Quantitative groups which tend to differ from the Executive group. If we could diagram the attitude areas, we would find various patterns of overlaps between the various groups which make these far from clean-cut clusters, but there is enough of a trend in the evidence to warrant the hypothesis that there are systematic differences of the sort described in the clusters of groups with respect to their resemblance to operating managers. Therefore, when we speak of the Faculty as being different from the Executives, we should specify which sub-groups of the Faculty we are referring to, because some sub-groups differ much more than others, and some sub-groups, like the Policy one, are not really distinguishable from the Executives.



IV. Discussion

1. In discussing the implications of these findings, it is important to reiterate the point that this is a study of attitude and value change, not a study of the acquisition of knowledge or skills. The presence or absence of attitude changes bear no necessary relationship to the amount learned by other criteria, though it would be of obvious interest in some future study to relate attitude changes to knowledge acquisition in a systematic fashion. Nevertheless, it is important to know what kind of attitude changes occur and how these changes are related to present Faculty and managerial attitudes.

It is clear, for example, that the over-all Faculty attitudes do not simply reflect those of the business community. Rather, they deviate in many areas from managerial attitudes, thus highlighting the degree to which the School seems to be functioning less as a "socializing" institution and more as a change producing institution. If the attitude change produced in our students prove to be stable, and if these students remain in industrial organizations, they may gradually reshape the prevailing managerial attitudes in such organizations.

Whether the School intends this or not, it is creating for its graduates the dilemma of whether or not to become change agents. It is forcing them to choose among the following alternatives: searching for a company which has attitudes similar to those they have acquired, influencing their company toward their own attitudes (the change agent role), abandoning the attitudes learned in school in favor of prevailing managerial ones, or leaving management as a career altogether.



in favor of a staff job or some other career like teaching.\* One obvious implication is that the School should be as aware as possible of what impact it is having, and, if it decides that this impact is desirable, to help the student understand and cope with the kind of education he obtains.

2. The above issue is, of course, complicated by the great variability of attitudes which this study reveals among Faculty sub-groups. It is entirely possible, indeed probable, that there is little consensus within the Faculty as a whole on which attitudes they wish to impart to all of the students. Each group deliberately or unwittingly attempts to influence those particular attitude areas which pertain most closely to its teaching area. The degree to which the School attempts to change managerial attitudes, then becomes a matter of assessing the degree to which different sub-groups succeed in doing so.

To the extent that the student has freedom to expose himself to which ever sub-group he chooses, he controls the degree to which he is influenced and the type of influence. On the other hand, to the degree that the curriculum removes degrees of freedom, it places the student into a captive role and exposes him to "coercive persuasion" (Schein, 1961).

If the "administrative policy" seminars come last in the curriculum, and if the faculty teaching them is attitudinally most similar

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\* In a study which will be reported separately, we are following a sample of 44 Graduates into the early stages of their management career in order to determine what subsequent changes take place. See, Schein (1964) for a preliminary write-up of this study.



to the industrial community, one may wonder whether such seminars have the function of "undoing" the influence of the other parts of the curriculum. This phenomenon has been observed in medical education where the practitioner is brought in to teach the advanced courses and in the process "undo" some of the influence of the basic sciences like anatomy, bio-chemistry, and bacteriology which are often taught by Ph.D.'s instead of M.D.'s and "scientists" instead of "doctors."

3. Another kind of issue derives from the demonstrated differences between Faculty and Executives. This issue is: "How much of a difference in beliefs, values, and attitudes can exist between teacher and student before communication breaks down?" This question becomes particularly relevant if one recognizes that what is a matter of fact or belief for one group is sometimes a matter of values or opinions for another group. For example, from the point of view of the Organization or Labor Relations groups, the superiority of group incentives may be a reasonably well verified fact, or at least a belief which rests on some empirical verification. For the manager, it may be essentially a matter of opinion or the reflection of a more general value which he attaches to group versus individual effort.

As most teachers no doubt know from experience, it is difficult to establish an open-minded attitude toward the data which the teacher accepts as valid if he is discussing a question which the student defines as being a matter of opinion. If the teacher's initial position is too deviant from the student's, no matter how much "fact" it may rest on, the

que fizeram com que o resultado final fosse um grande  
sucesso, mas também serve para dizer que os resultados obtidos  
não só são resultados matemáticos, mas também são resultados  
que evidenciam a eficiência da estratégia de ensino-aprendizagem  
utilizada, uma estratégia que é a estratégia de ensino-aprendizagem  
de suporte social. No que diz respeito ao resultado das diferenças  
estatísticas, podemos dizer que houve diferenças estatisticamente  
significativas entre os resultados obtidos no ensino-aprendizamento  
de suporte social e no ensino-aprendizamento tradicional, havendo  
uma melhoria significativa no desempenho dos alunos.

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